



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 480
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/769,173	01/30/2004	Sherman (Xuemin) Chen	15415US01	7811
23446 7590 06/21/2007 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			EXAMINER PALIWAL, YOGESH	
			ART UNIT 2135	PAPER NUMBER
			MAIL DATE 06/21/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/769,173

Applicant(s)

CHEN ET AL.

Examiner

Yogesh Paliwal

Art Unit

2135

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- Applicant's amendment filed on 06/07/2007 has been entered. Applicant has amended claims 2-3, 5-20 and 34. Currently claims 1-41 are pending in this application.
- Examiner acknowledges amendment made to claim set 11-20 to overcome 35 U.S.C. § 101 rejection. As a result, 35 U.S.C. § 101 rejection for claims 11-20 is withdrawn.

Response to Arguments

1. Applicant's arguments filed 06/07/2007 have been fully considered but they are not persuasive.

- Applicant argues that: "Akiyama does not disclose or suggest at least the limitation of "generating at a first location a digital signature of a secure key to obtain a digitally signed secure key," as recited by the Applicant in independent claim 1."
 - Examiner respectfully disagrees with applicant's remark and still maintains that Akiyama discloses generating at a first location (Fig.29, This is a broadcast station where the contents, keys and digital signature for contact information etc, are generated and then sent to receivers) a digital signature (Fig. 5, "Digital signature") of a secure key to obtain a digitally signed secure key (Fig. 5, "work keys", also at paragraph 0107, "The digital signature is information used to check the authenticity of the

contract information, and is used to prevent tampering.”, also at paragraph 0107, “The contract information is made up of, e.g., a receiver ID, channel contract information, the number n of work keys, n pairs of work keys and work key identifiers, and digital signature”). So, since the contract information contains work keys, which can be interpreted as “secure key”, and digital signature is generated for entire contract information, which include work keys. When the digital signature is generated for entire contract information we can interpret that as signed contract information and since work keys are also part of contract information they can also be interpreted as signed work keys as required by claim 1. Also at paragraphs 0112, 0113, 0114 and 0115 goes into more details of how the digital signature can be generated. Therefore, Akiyama clearly teaches this claimed limitation.

- Applicant further argues, “Akiyama does not disclose or suggest at least the limitation of “transmitting the digitally signed secure key from the first location,” as recited by the Applicant in independent claim 1.”
 - Examiner respectfully disagrees with applicant’s remark and still maintains that Akiyama discloses transmitting the digitally signed secure key from the first location (Paragraph 0167, “The transmission processing operation of an individual control packet by the information distributor apparatus shown in FIG. 29...”). Note: individual control packets contains encrypted contract information (Paragraph 0106, “The individual control packet is

comprised of an information identifier, master key identifier, and encrypted contract information, as shown in FIG. 7."), and as established above, contract information contains work keys, as a result, when control packet is transmitted, it contains the signed work keys as well, and thus we can interpret that signed work keys are transmitted from a broadcast device depicted in Fig. 29. Therefore, Akiyama clearly teaches this claimed limitation as well.

- Examiner asserts that Akiyama clearly teaches all the limitations that were argued by applicant. Independent claims 11, 21 and 32 are similar in many respects to the method disclosed in independent claim 1 and also rejected on the same grounds. As a result, previously presented rejection is maintained and this action is made final.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-41 are rejected under 35 U.S.C. 102(b) as being anticipated by Akiyama (US2002/0001386).

Regarding **Claim 1**, Akiyama discloses a method for secure key authentication, the method comprising:

generating at a first location (Fig.29, This is a broadcast station where the contents, keys and digital signature for contract information etc, are generated and then sent to receivers) a digital signature (Fig. 5, "Digital signature") of a secure key to obtain a digitally signed secure key (Fig. 5, "work keys", also at paragraph 0107, "The digital signature is information used to check the authenticity of the contract information, and is used to prevent tampering.", also at paragraph 0107, "The contract information is made up of, e.g., a receiver ID, channel contract information, the number n of work keys, n pairs of work keys and work key identifiers, and digital signature").

and transmitting the digitally signed secure key from the first location (Paragraph 0167, "The transmission processing operation of an individual control packet by the information distributor apparatus shown in FIG. 29..."). *Note: individual control packets contains encrypted contract information (Paragraph 0106, "The individual control packet is comprised of an information identifier, master key identifier, and encrypted contract information, as shown in FIG. 7."), and as established above, contract information contains work keys, as a result, when control packet is transmitted, it contains the signed work keys as well, and thus we can interpret that signed work keys are transmitted from a broadcast device depicted in Fig. 29.*

Regarding **Claim 2**, the rejection of claim 1 is incorporated and further Akiyama discloses generating the digital signature from at least one of an asymmetric encryption algorithm and a symmetric encryption algorithm (**Paragraph 0111, lines 9-10, “authenticates the digital signature using key information (secret key or public key) stored in a digital signature”**)

Regarding **Claim 3**, the rejection of claim 1 is incorporated and further Akiyama discloses encrypting the digitally signed secure key prior to transmission to obtain an encrypted digitally signed key (**Fig. 7, “Enciphered contract information”, also at Paragraph 0106, lines 5-8, “The individual control packet is comprised of an information identifier, master key identifier, and encrypted contract information, as shown in FIG. 7.”**) [*Each digitally signed contract information is encrypted using and master key*]

Regarding **Claim 4**, the rejection of claim 3 is incorporated and further Akiyama discloses the secure key comprises at least one of a master key, a work key and a scrambling key. (**Fig. 5, “Work keys”**)

Regarding **Claim 5**, the rejection of claim 4 is incorporated and further Akiyama discloses the receiving the digitally signed secure key at a second location (**Paragraph 0110, lines 1-2, “Upon receiving an individual packet via the public telephone network and modem 101...”**)

decrypting the digitally signed secure key to obtain a decrypted digitally signed secure key (**Paragraph 0110, Lines 11-17, “If the master key identifier matches the**

master key, that master key is output from the master key storage 103 (step S4) to decrypt contract information in the individual information packet”)

Regarding **Claim 6**, the rejection of claim 5 is incorporated and further Akiyama discloses if the secure key comprises a work key then a decrypted digitally signed master key at the second location is utilized for decrypting an encrypted digitally signed work key (Paragraph 0110, Lines 11-17, **“If the master key identifier matches the master key, that master key is output from the master key storage 103 (step S4) to decrypt contract information in the individual information packet (step S5). Work key information (pairs of work key identifiers and work keys and the like) contained in the decrypted contract information is stored in a work key storage 105”)**)

Regarding **Claim 7**, the rejection of claim 5 is incorporated and further Akiyama discloses if the secure key comprises a scrambling key then a decrypted digitally signed work key at the second location is utilized for decrypting an encrypted digitally signed scrambling key (Paragraph 0125, lines 9-14, **“If the work key can be acquired, information of an encrypted section in the common control packet is decrypted using the work key (step S44). A channel key Kch is acquired from the decrypted information, and is stored in the channel key storage 118”)**)

Regarding **Claim 8**, the rejection of claim 5 is incorporated and further Akiyama discloses verifying authenticity of the digital signature of the digitally signed secure key (Paragraph 0112, line 1-2, **“digital signature authentication process”)**

Regarding **Claim 9**, the rejection of claim 8 is incorporated and further Akiyama discloses verifying the authenticity of the digital signature utilizing at least one of an asymmetric decryption algorithm and a symmetric decryption algorithm (**Paragraph 0111, lines 7-11, “the contract information certifying device 107 certifies or authenticates the digital signature using key information (secret key or public key) stored in a digital signature authentication key storage 108”**)

Regarding **Claim 10**, the rejection of claim 8 is incorporated and further Akiyama discloses determining whether to verify authenticity of the digital signature (**Paragraph 0111, lines 6-8, “If the two IDs match, the contract information certifying device 107 certifies or authenticates the digital signature using key information”**)

Claims **11, 21 and 32** are “computer program” and “system” claims analogous to “method” claim 1. Akiyama in the same reference discloses a system for performing method of claim 1 [Broadcast receiver is depicted in figure 1 and Transmitter system is depicted in figure 29]. Also, it should be noted that since Akiyama's system discloses the hardware to perform the method of claim 1, therefore it would also have computer software that performs the method of claim 1. Claims 11, 21 and 32 are rejected under same rationale as the rejection of claim 1.

Claims **12, 22 and 33** are “computer program” and “system” claims analogous to “method” claim 2. Claims 12, 22 and 32 are rejected under same rationale as the rejection of claim 2.

Art Unit: 2135

Claims **13, 23 and 34** are "computer program" and "system" claims analogous to "method" claim 3. Claims 13, 23 and 34 are rejected under same rationale as the rejection of claim 3.

Claims **14, 24 and 35** are "computer program" and "system" claims analogous to "method" claim 4. Claims 14, 24 and 35 are rejected under same rationale as the rejection of claim 4.

Claims **15, 25 and 36** are "computer program" and "system" claims analogous to "method" claim 5. Claims 15, 25 and 36 are rejected under same rationale as the rejection of claim 5.

Claims **16, 26 and 37** are "computer program" and "system" claims analogous to "method" claim 6. Claims 16, 26 and 37 are rejected under same rationale as the rejection of claim 6.

Claims **17, 28 and 38** are "computer program" and "system" claims analogous to "method" claim 7. Claims 17, 28 and 38 are rejected under same rationale as the rejection of claim 7.

Claims **18, 28 and 39** are "computer program" and "system" claims analogous to "method" claim 8. Claims 18, 28 and 39 are rejected under same rationale as the rejection of claim 8.

Claims **19, 29 and 40** are "computer program" and "system" claims analogous to "method" claim 9. Claims 19, 29 and 40 are rejected under same rationale as the rejection of claim 9.

Claims **20, 30 and 41** are “computer program” and “system” claims analogous to “method” claim 10. Claims 20, 30 and 41 are rejected under same rationale as the rejection of claim 10.

Regarding **Claim 31**, rejection of claim 21 is incorporated and further Akiyama discloses at least one processor comprises at least one of a host processor, a microprocessor, and a microcontroller (Figure 29, processor used in the system of Fig. 29 is a host processor)

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

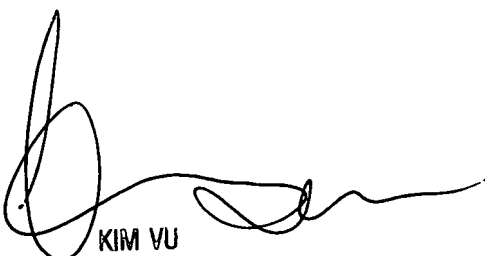
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh Paliwal whose telephone number is (571) 270-1807. The examiner can normally be reached on M-F: 7:30 AM - 5:00 PM EST.

Art Unit: 2135

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571) 272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YP
6/19/07



KIM VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100